REMARKS

Claims 1-18 are pending in the present Application. By this Amendment, new claims 19 and 20 have been added, and no claims have been cancelled or withdrawn. Accordingly, claims 1-20 are currently at issue.

I. Claim Objections

In paragraph 2 of the Office Action, the Examiner objected to claim 4 on the grounds that the Examiner believes the claim to be intended to refer to magnesium content, rather than manganese content. Applicant confirms that the Examiner is correct, and has amended claim 4 accordingly.

II. Rejections Under 35 U.S.C. § 112

In paragraph 4 of the Office Action, claims 1-13 and 18 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite, for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention..

The Office Action asserts that the use of the phrase, "other elements <0.05 each and 0.15 total" renders the claim indefinite, because the meaning of the term "other elements" is ambiguous. Applicant submits that this phrasing is relatively common in the art, and the term "other elements" refers to elements not specifically listed in the recited composition, as known in the art. In other words, this claim language means that any element not recited in the claim has a content of <0.05 wt.%, and that the total of all elements not recited in the claim is <0.15 wt.%. Applicant confirms that any other elements not specifically listed in the claim being absent (i.e., = 0) meets this element.

Additionally, Applicant has amended claims 1, 8, and 18 to recite "<0.05 each and <0.15 total," to clarify the meanings of the claims.

Accordingly, this rejection has been addressed, and Applicant respectfully requests withdrawal of the same.

III. Rejections Under 35 U.S.C. § 102

In paragraph 6 of the Office Action, claims 1-6, 8-11, 14, and 16-18 were rejected under 35 U.S.C. § 103(a) as being anticipated by U.S. Patent Application Publication No. 2003/0155409 to Dockus et al. ("Dockus"). Applicant respectfully traverses these rejections.

A. Claims 1-6 and 8-11

Claim 1 recites, among other elements, a core alloy with a copper (Cu) content of between 0.3 and 1.0 wt.%. Dockus does not disclose, teach, or suggest at least this element of claims 1 and 14. The Examiner points to the mention in Dockus of the use of AA3003 alloy for disclosure of this element. However, the specifications for AA3003 alloy recite a copper content of 0.05 to 0.20 wt.% (Source: ASM Metals Handbook, Desk Edition (2nd Ed.), 1998), which is clearly outside the recited composition in claim 1. Thus, Dockus does not disclose, teach, or suggest at least this element of claim 1, and cannot anticipate claim 1.

Additionally, claim 1, as amended, recites that "at least one of the plates consists essentially of: (a) a core alloy ... and (b) an aluminum brazing alloy coated on at least one face of the core alloy." Dockus does not disclose, teach, or suggest the use of a brazing plate as defined in claim 1. Dockus discloses the use of not only a core layer and a cladding layer, but also an additional "braze-promoting layer" and a "bonding layer," which purportedly provide significant benefits to the disclosed brazing material. Claim 1 does not include any significant additional layers within its scope, because claim 1 uses the language "consists essentially of." Thus, because these additional layers in the brazing product of Dockus materially affect the characteristics of the disclosed product, the brazing product of Dockus falls outside the scope of claim 1, and Dockus cannot anticipate claim 1, for this additional reason.

Claims 2-6 and 8-11 depend from claim 1 and include all the elements of claim 1. Thus, for the reasons stated above with respect to claim 1, Dockus cannot anticipate claims 2-6 and 8-11.

Additionally, claims 2 and 8 recite that the core alloy has a copper content of between 0.35% and 1.0%. As described above, Dockus does not disclose this element of claims 2 and 8, and cannot anticipate claims 2 and 8 for this additional reason.

Further, claims 3 and 8 recite that the core alloy has a manganese content of between 0.3% and 0.7% Dockus also does not disclose this element. The Examiner points to AA3003

alloy as containing the recited manganese content. However, the specifications for AA3003 recite a manganese content of between 1.00% and 1.50% (Source: ASM Metals Handbook, Desk Edition (2nd Ed.), 1998). Thus, Dockus also does not disclose this element of claims 3 and 8, and cannot anticipate claims 3 and 8 for this additional reason.

B. Claims 14 and 16-18

Claim 14 recites, among other elements, a core alloy having "between 0.3% and 1.0% by weight copper." This element is similar to the element recited above with respect to claim 1. Thus, for the same reasons stated above with respect to claim 1, Dockus does not disclose at least this element of claim 14, and cannot anticipate claim 14.

Claims 16-18 depend from claim 14 and include all the elements of claim 14. Thus, for the same reasons stated above with respect to claim 14, Dockus cannot anticipate claims 16-18.

Additionally, claim 18 recites that the core alloy has a copper content of between 0.35% and 1.0% and a manganese content of between 0.3% and 0.7%. As described above with respect to claims 2, 3, and 8, Dockus does not disclose a core alloy having these contents. Thus, for this additional reason, Dockus cannot anticipate claim 18.

IV. Rejections Under 35 U.S.C. § 103

In paragraph 10 of the Office Action, claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Dockus, in view of U.S. Patent No. 4,929,511 to Bye et al. ("Bye"). In paragraph 11 of the Office Action, claims 12 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dockus, in view of U.S. Patent No. 5,863,669 to Miller ("Miller"). In paragraph 12 of the Office Action, claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Dockus, in view of U.S. Patent No. 6,234,377 to Teshima et al. ("Teshima"). Applicant respectfully traverses these rejections.

A. Claims 7, 12, and 13

Claims 7, 12, and 13 depend from claim 1 and include all the elements of claim 1. As stated above with respect to claim 1, Dockus does not disclose a core alloy with a copper (Cu) content of between 0.3 and 1.0 wt.%. The Examiner does not point to any disclosure in Bye, Miller, or Teshima of a core alloy having this recited copper content. Thus, the cited references

do not disclose, teach, or suggest at least this element of claims 7, 12, and 13, and no prima facie case of obviousness has been established with respect to claims 7, 12, and 13.

Additionally, the prior art teaches away from modifying the copper content of the core alloy disclosed in Dockus to be within the range recited in claim 1. As stated in Par. [0017] of Applicant's specification, at the time of the invention, the corrosion resistance of the core alloy was believed to be reduced by Cu contents beyond 0.3 %, as taught by EP 1254965. Thus, one skilled in the art would be discouraged from modifying the alloy disclosed in Dockus to include a copper content as recited in claim 1. Accordingly, for this additional reason, no prima facie case of obviousness has been established with respect to claims 7, 12, and 13.

Further, as described above with respect to claim 1, Dockus does not disclose a brazing plate that "consists essentially of a core alloy ... and an aluminum brazing alloy coated on at least one face of the core alloy." The Examiner does not point to any disclosure in Bye, Miller, or Teshima of a plate as recited in claim 1. Thus, the cited references do not disclose, teach, or suggest at least this element of claims 7, 12, and 13, and no prima facie case of obviousness has been established with respect to claims 7, 12, and 13.

B. Claim 15

Claim 15 depends from claim 14 and include all the elements of claim 1. As stated above with respect to claim 14, Dockus does not disclose a core alloy with a copper (Cu) content of between 0.3 and 1.0 wt.%. The Examiner does not point to any disclosure in Miller of a core alloy having this recited copper content. Thus, the cited references do not disclose, teach, or suggest at least this element of claim 15, and no prima facie case of obviousness has been established with respect to claim 15.

Additionally, as described above, the prior art teaches away from modifying the copper content of the core alloy disclosed in Dockus to be within the range recited in claim 14. Accordingly, for this additional reason, no prima facie case of obviousness has been established with respect to claim 15.

C. Cited References are Not Properly Combinable

As a further matter, the cited references Bye, Miller, and Teshima, are not properly combinable with the disclosure of Dockus, and cannot be used to form a prima facie case of obviousness with respect to the present claims.

Bye is directed to a process of strip direct chill casting a brazing foil used for a filler material (See Abstract; Col. 2, Lns. 30-33; Col. 3, Lns. 60-69), rather than a brazing process using a clad brazing sheet, as disclosed and claimed by the Applicant. Thus, one skilled in the art would not look to Bye in designing a clad brazing sheet as claimed in the present Application, and Bye is not properly combinable with Dockus to form a prima facie case of obviousness with respect to the present claims.

Miller is directed to a brazing sheet that is designed for use with Nocolok (i.e., flux) or vacuum brazing (See Col. 4, Lns. 14-18). Miller does not disclose or suggest the use of a protective atmosphere, as recited in claims 1-18. Additionally, Miller discloses that high post-braze strength and high corrosion resistance can be obtained through Nocolok or vacuum brazing (Miller, Col. 5, Lns. 43-44; Col. 8, Lns. 24-27; Claims 10 and 12; FIG. 3), and thus, Miller discourages one skilled in the art from using protective atmosphere brazing. In contrast, claims 1-18 are directed fluxless brazing processes with a protective atmosphere. Thus, one skilled in the art would not look to Miller in designing a controlled atmosphere brazing process as recited in claims 1-18, and Miller is not properly combinable with Dockus to form a prima facie case of obviousness with respect to the present claims.

Teshima teaches a brazing composition for acting as a flux and a brazing material, to avoid the need to use separate flux and brazing material in brazing applications in order to lower cost and simplify the manufacturing process (See Col. 4, Lns. 32-37), and thus, is not pertinent to brazing processes using a conventional type of brazing sheets. Additionally, like Miller, Teshima does not deal with fluxless controlled atmosphere brazing applications, and Teshima is not pertinent to protective atmosphere brazing processes, as recited in claims 1-18. Accordingly, one skilled in the art would not look to Teshima in designing a brazing sheet as claimed in the present Application, and Teshima is not properly combinable with Dockus to form a prima facie case of obviousness with respect to the present claims.

V. New Claims

Applicant submits that new claims 19 and 20 are patentable over the references cited in the present Office Action, for the reasons briefly described below.

Claim 19 includes, among other elements, a core alloy having a copper content of between 0.35% and 1.0%, and a manganese content of between 0.3% and 0.7%. As described above, the cited references do not disclose, teach, or suggest a core alloy having these recited copper and manganese contents. Thus, claim 19 is patentable over the cited references.

Claim 20 includes, among other elements, a core alloy having a copper content of between 0.3% and 1.0%. As stated above, the cited references do not disclose, teach, or suggest a core alloy having this recited copper content. Additionally, claim 20 recites a brazing sheet "**consisting essentially of**: a core alloy ... and a brazing alloy coating at least one face of the core alloy." As described above, Dockus discloses a brazing sheet that includes additional layers beyond the core layer and the clad layer, which takes the sheet disclosed in Dockus outside the scope of claim 1. Further, none of the other cited references can remedy this deficiency Dockus. Thus, claim 20 is also patentable over the cited references.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration of the Examiner's rejections and allowance of claims 1-18 in the present Application. Applicant also respectfully requests examination and allowance of new claims 19 and 20. Applicant submits that the Application is in condition for allowance and respectfully requests an early notice of the same.

Respectfully submitted,

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By: _____

Gregory G. Schlenz, Registration No. 55,597
Customer No. 22908
Banner & Witcoff, Ltd.
10 South Wacker Drive, Suite 3000
Chicago, Illinois 60606
312-463-5000

(12491285.1)